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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,359	09/16/2003	Prashant G. Karandikar	M-102-E	1655

7590 08/01/2006

M Cubed Technologies, Inc.  
1 Tralee Industrial Park  
Newark, DE 19711

EXAMINER
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DIXON, MERRICK L

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 08/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/663,359

Applicant(s)

KARANDIKAR ET AL

Examiner

Merrick Dixon

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 18,19,21,22 and 24-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18,19,21,22 and 24-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
MERRICK DIXON  
PRIMARY EXAMINER

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 1774

1. Claims 18,19,21,22 and 24-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 18, line 2, the phrase, "substantially amorphous form" is vague and indefinite and not understood.

In claim 26, line 2, "substantially amorphous" is not understood. The phrase is vague and indefinite.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18,19,21,22,27,28,29,31,32,33,34,35,37,38, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Papenburg et al(US 5505805). The cited reference teaches the claimed invention including a substrate with a mirror thereon, said mirror having a reflective surface comprising silicon metal and the substrate comprising a composite body comprising a matrix component comprising silicon metal and reinforcing material comprising a plurality of carbon fibers distributed therein and a coating material-- col 6, lines 64-col 7, line 43; col 8, lines 5-61; col 13, lines 1-30;col 5, lines 65- col 6, line 27; col 7, lines 27- 31; col 9, lines 23-38.; col 5, lines 61-64.

Concerning claims 19,21,22,,27,,29,,34,,35, the reference in col 6, lines 25-32 teaches the claimed silicon limitations. Also, see col 8, lines 44-51 teaches the limitations. See

Art Unit: 1774

col 10, lines 15-30 also. Concerning claims 38, the reference teaches unidirectional carbon fibers in col 6, lines 49-54 and col 6, lines 60-63, respectively. Concerning claims 19,28,32, the reference teaches similar carbide- see reference. Concerning claims 31,33,41, it is apparent that as the cited reference teaches the claimed carbon fibers , such fibers possesses identical CTE values as claimed.- col 12, lines 63-67. Concerning claim 14, the reference teaches manipulation of the orientation and similar amounts of the plies in col 6, lines 56-62.

3.

Claims 30 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Papenburg et al('805) in view of Bommier et al(US 5643663).

The reference to Papenburg et al was discussed above, inter all. The primary reference fails to teach its carbon fibers be woven. The secondary reference , however, teaches that it is known in the art to utilize woven carbon fiber material in carbon fiber reinforced material such as taught by the primary reference- col 1, lines 13-27. It would have been obvious to one of ordinary skill in the art at the time the invention is made to combine the teachings of the secondary reference, in the absence of unexpected results ,and incorporate the primary reference with woven fiber tows in an attempt to join them together(Bommier et al, col 1, lines 26-27). Concerning claim 37, it is submitted that such woven tows would indeed include two-dimensional plies for the primary reference teaches multidirectional structure in col 6, lines 56-62.

4. Applicant's arguments with respect to claims 1-22,24 have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6

Applicants who wish to send a facsimile (draft copies) for the examiner's immediate review can do so by using the Examiner's personal fax number at 571-273-1520. The faxing of all papers must conform with the notice published in the Official Gazette, 1096 O.G. 30 ( November 15, 1989). **NOTE: All facsimiles sent to the examiner's**

Art Unit: 1774

**personal fax number should be in draft-forms and will be treated as informal.**

**Same facsimiles will not be entered** in the related applications unless  
otherwise agreed and noted by the examiner.

**The fax number for all other fascimile is 571-273-8300.**

Information about **the status of an application** may be obtained from the Patent

Information Retrieval system (**Private PAIR**).

Status inquires for **published applications** may be retrieved from either **Private PAIR**  
or **Public PAIR**. Questions about the PAIR system should be directed to the Electronic  
Business Center at **866-217-9197**.

Any questions concerning the instant communication should be directed to Examiner  
Dixon, at 571-272-1520, Mondays, Wednesdays and Thursdays, between 12 noon and  
8 PM, eastern time .

A handwritten signature in black ink, appearing to read 'Merrick Dixon', with a long horizontal flourish extending to the right.

Merrick Dixon

Primary Examiner

Group 1700